

# ADE Response | Ofgem Locational Pricing Call for Input | 15 June 2022

## Context

The ADE welcomes the opportunity to respond to Ofgem's Call for Input on Locational Pricing.

The ADE is the UK's leading decentralised energy advocate, focused on creating a more cost effective, low-carbon and user-led energy system. The ADE has more than 150 members active across a range of technologies, including both the providers and the users of energy equipment and services. Our members have particular expertise in demand side energy services including demand response and storage, combined heat and power, heat networks and energy efficiency.

## Overall Evaluation

The ADE fully supports the need for greater locational and temporal signals to stimulate the exponential increase of flexible capacity in the coming decades. Upon reflection and much stakeholder engagement however, we have come to the conclusion that LMP is not the optimal route to achieving this.

### 1. The key opportunities associated with introducing more granular locational pricing in GB

The ADE strongly supports improved locational signals in GB. Locational and temporal signals are especially important for incentivising investment in DSR and storage in order to reach the 60GW of flexibility needed on the system by 2050, as projected by the Smart Systems and Flexibility Plan. A lack of market signals currently poses one of the greatest barriers to unlocking the full value of flexibility which could account for system savings of £16.7bn per year in 2050<sup>1</sup>. Furthermore, we support the need to reform electricity balancing and reduce the high levels of redispatch currently being undertaken by ESO. However, the ADE considers there are other ways to reach these ends that avoid some of the challenges of nodal pricing (explored below).

Better locational price signals incentivise the deployment of flexible assets in constraint areas where they will prove most useful for system security. This applies to both accessing flexible demand and building assets for the primary purpose of providing flexibility.

Currently, none of the GB's market mechanisms or other signals create sufficiently strong locational signals. This is the case in the wholesale market, the Balancing Mechanism, ancillary services and network charging.

### The role of locational signals in a more decarbonised system

#### *At investment stage*

In a future decarbonised electricity system, the extent of capacity that is elastic to location will change. Given the Government's targets for renewable electricity generation and planning regimes in Scotland and England, offshore and onshore wind cannot significantly respond to locational signals at the point of investment. This is also largely the case for solar PV. Further, where hydrogen electrolyzers and CCUS are sited is also likely to be driven far more by proximity to clusters and the hydrogen transport and storage infrastructure being developed there. Where

<sup>1</sup> Carbon Trust and Imperial College London, *Flexibility in Great Britain* (May 2021).

these are new technologies are supporting through Government subsidy, the impact therefore of LMP is likely to simply be increases to consumer bills and ongoing constraints – it will not materially change investment decisions.

The parts of the electricity system that will be more elastic at investment stage are: peaking plants (for those that can decarbonise), battery storage and demand-side response portfolios (likely comprising a mix of on-site generation, storage and demand loads). For the latter, whilst the demand loads may not be that elastic to locational signals at an asset level (the EV chargepoint will be built where there is demand for EV charging), how portfolios are built up will be more sensitive to location.

If this is true, the vast majority of the capacity that could respond to these signals at investment stage will be relatively small-scale, largely on the demand-side and connected at Distribution.

Therefore, a first criterion for a good locational signal on investment timelines is that it provides a meaningful investment signal to such capacity.

#### *Managing constraints in operational timeframes*

The ADE strongly supports Ofgem's (and the ESO's view) that the current levels of re-dispatch in the Balancing Mechanism by the ESO to manage constraints is profoundly sub-optimal and that this will continue to worsen over time. We strongly support the need to find an alternative approach.

Managing such constraints in future will require far greater participation from demand and storage sited behind constraints than is currently possible.

#### **Finding an alternative way forward**

For reasons set out below, the ADE does not support the introduction of LMP to achieve these changes.

As an alternative, we would like to propose that the following is considered in much greater detail.

#### *At investment stage*

If you consider that the scale of the build-out of new renewable electricity generation leaves very little leeway as to where it is sited, the conclusion becomes that LMP will increase consumer bills and will not materially reduce the level of investment in network infrastructure. With respect to this specifically, the ADE's priorities would be –

- That needed network infrastructure is built in a timely way so as not to exacerbate what could already be high levels of constraint – this is particularly important given the history of delays to strategic pieces of network such as the Eastern and Western Links and is supported by the recent move to more strategic planning of offshore networks.
- Serious consideration is given to the impact of recovering such vast network expansion through fixed charges on the demand-side – in particular, whether the sheer magnitude of those charges in future could dwarf the locational and Time of Use signals that are being sent to the only forms of capacity that can respond to them. For the ADE, this underlines the importance of moving such charges to a broader base (i.e., across electricity, gas, hydrogen and heat networks) or ideally to some extent onto taxation.

Further to these considerations, the locational signals should be designed much more with distribution-level storage and demand-side response portfolios in mind. There are several ways in which this could be approached that are more moderate versions of LMP.

Firstly, demand network charges, both at DUoS and TNUoS are currently under reform and are considering locational elements. At DUoS, Ofgem are already exploring the use of Bulk Supply Point by which to set long-term demand and generation forward-looking DUoS charges. Further, there is a clear need to reform cost-reflective demand TNUoS charges to better reflect the value of demand sited nearer to generation. Concerted action to progress these reforms should be prioritised to provide stronger locational signals for storage and demand.

This is particularly the case given Ofgem's decision to override precisely the locational signal at Transmission that was created through the shifting of much of Demand TNUoS into a fixed charge and given that Ofgem's decision to split Access reform and the Forward-looking Charges reform means that Ofgem has currently been forced into removing, not strengthening, locational signals for flexible capacity.

Secondly, regarding procured markets, it is not appropriate for ancillary services to have locational signals by default. Reserve capacity and frequency response when needed for national energy balancing should not have a locational signal. However, others which target constraint management could have a stronger locational element. New markets such as the Local Constraint Market to enable greater competition to BM bids is a useful way forward which has significant potential. This approach should be expanded further.

Further, the ESO must get better at accessing smaller, cheaper assets through the Balancing Mechanism through reducing the current skip rate and ultimately upgrading its IT infrastructure to manage data and dispatch instructions to smaller assets. As they have acknowledged, the ESO cannot currently make use of smaller flexible assets that are well-sited to reduce constraints through the Balancing Mechanism or any of its ancillary services as a result of ageing IT infrastructure that cannot receive and use data on assets below 1MW. Building portfolios of demand-side response in specific locations will require thousands if not millions of very small, including domestic, assets which can only be done if the IT systems being used for the wholesale market and Balancing Mechanism can manage such information.

Building these markets to the point where there is some historical data on revenue and reasonable projections of levels of procurement going forward would mean that they could also act as an investment signal for storage and demand.

#### *Managing constraints on operational timescales*

As with the considerations above, significant expansion of Local Constraint Markets and the ESO's ability to access smaller assets in the Balancing Mechanism would also help manage constraints at operational timescales.

Further to this, and whilst noting that the majority of generation will be at Transmission-level, more could also be done on improving balancing at a distribution network level. At present, Active Network Management schemes preclude the ability of generation, storage and demand-side response to all participate in markets to manage constraint. In future, the distribution networks should be much more focused on balancing more locally and in doing that, maximising local renewable output through storage and demand turn-up, rather than automatic constraint of renewable generation through SCADA systems.

Finally, there may also be more innovative solutions to explore to manage Transmission constraints within operational timescales. One proposal that has been put forward concerns, for example, the use of capacity auctions for transmission network access and similar work is underway to look at secondary trading of access rights at distribution.

## **2. The key implementation challenges, risks and mitigations**

As above, the ADE fully supports the need for greater locational and temporal signals to stimulate the exponential increase of flexible capacity in the coming decade. Upon reflection and much stakeholder engagement however, we have come to the conclusion that LMP is not the optimal route to achieving this.

A primary concern is timelines. Whereas nodal pricing may have been a legitimate mechanism to incentivise the long-term investment in flexibility needed a decade ago, massive market upheaval and uncertainty is unlikely to stimulate such a response in time to reach our 2035 goals. Instead, it is preferable to pursue similarly transformative changes through mechanisms that already have a foundation to build upon (such as network charging and LCMs) rather than building an entirely new market from scratch.

Secondly, the current proposals do not consider the politics of LMP sufficiently. As noted above, the ADE does not consider that concerns, fair or perceived, regarding a postcode lottery should prevent a shift towards locational signals given the opportunities to reduce the overall system cost of decarbonisation. However, this needs to be approached very carefully. The ADE has consistently advocated for Ofgem creating the fundamental locational and Time of Use signals that are needed and then BEIS taking a greater role in protecting vulnerable consumers; rather than dampening the signals in the first place. Further, we consider that milder alternatives may be more politically feasible than LMP.

Finally, more consideration is needed on ways to improve wholesale market liquidity whilst strengthening locational signals. Wholesale market liquidity is already an acute concern for suppliers and flexibility providers and the real risk of such markets becoming more illiquid following the current crisis must be avoided. Ways of approaching this should include enabling much greater flexible capacity to trade in the wholesale market through the introduction of P415 and exploring further measures (including reducing the Settlement Period and gate closure).

As above, we support the case for change and believe that dedicating the resources implementing nodal pricing would demand into other reforms would reap the same results. This is especially true when considering wholesale market changes and how signals for flexible capacity can be integrated at pace. Exploring how closer to real time activity in the wholesale market could benefit both DSF and intermittent generation on offsetting soaring balancing costs is one such area of discussion. Likewise, we must consider how to incentivise intermittent generation to participate in forward markets and simultaneously contract with flexibility providers to offset the risk of forward activity for generation forecasting.

## **3. The proposed approach to modelling zonal and nodal market designs**

The proposed approach is generally positive, although on an expeditious timescale. However, a rather monolithic assessment of 'customer/consumer' seems to be in use with little distinction between customer type (industrial, commercial, domestic) and profile (engaged, disengaged, vulnerable). Such delineations add significant complexity to the modelling but are essential in order to create an accurate picture of customer impacts.

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### **For further information please contact:**

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